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Research Article

A PHARMACEUTICAL AND ANALYTICAL EXPLORATION OF *GOMUTRA HARITAKI*

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ABSTRACT

Ayurveda has emerged and developed as a holistic system of treatment. It has a great treasure of knowledge of natural drugs (Plant, Animal and Mineral originated) that has been in use since long to maintain the health and mitigate the adverse situation in the body during diseases.

Even though *Ayurveda* is a medical science, other various disciplines related to medicine are also described in detail in it; Pharmaceutical science is one of them. *Ayurvedic* pharmaceutics is completely scientific and it has arisen from centuries of experiences. Vast literature is available on different issues of pharmaceutics in *Ayurveda* such as collection of raw material from their natural sources; identification & their validation; various purification, manufacturing and analytical methods; shelf life of drug & storage methods etc. All these relevant issues have been described in a very scientific manner, but recent developments of pharmaceutics need to be incorporated in existing science for their acceptance globally.

Gomutra haritaki is a medicine that has *Gomutra* (Animal product) and *Haritaki* (Plant product) as ingredients and both have immense biochemical properties and prescribed in various ailments. In Ayurvedic text *Gomutra haritaki* has been described in *Pandu roga* (Anemia), *Mukha roga* (Mouth diseases) and *Arsha* (Piles).

Through this article, an attempt has been made to collect the all related classical references, and generate the standard operative procedures for manufacturing. *Gomutra haritaki* was prepared as per description available in *Vrihat nighantu ratnakar*. It was yellowish brown in color and there was an intense smell of cow urine. Organoleptic and physiochemical characterization was evaluated through validated standardization procedures.

INTRODUCTION

Plants, animals and minerals are the natural sources and their parts or products have been used in the treatment of diseases of living beings for thousands of years. These are the backbone of the traditional Indian medicinal system, *Ayurveda*. Thousands of combinations of these natural products are available in classical literature of *Ayurveda* and this treasure are being increased by continuous and rigorous research as *Ayurveda* or natural products have been become a prime concern in the treatment of various diseases. During the course of development of *Ayurveda*, various methods of preparation of *Ayurvedic* drugs with these natural products have been evolved by exploration and experiences.

In the classical text various magical patterns are available with some herbal drugs that on blending with other herbal drug or by taking with *Anupan dravya*, exhibits various properties. *Haritaki, Sunthi* and *Bhallataka* are some examples of such herbal drugs that make various combinations with other materials or with *Anupan dravya* and provide specific therapeutic effects.

Haritaki (*Terminalia chebula*) is very noted medicine and known as the mother of the medicine. It has various biologically active components that

exhibit lot of therapeutic properties. Different methods of administration of *Haritaki* drug are available in *Ayurveda*. It is recommended to take as a paste for cleaning the body mala; to chew for increasing the digestive fire; to take boiled fruit for controlling the excessive motions and to take fried *Haritaki* for mitigating all the *Doshas*. It has mild laxative property also hence it is recommended in *Panchakarma* and incorporated in various treatment regimes for purgation.

Gomutra (Cow urine) is most widely used urine among eight type of urine mentioned in *Ayurveda*.[1] It is a natural and non-toxic product and it is believed to have various therapeutic indications and have external as well as internal route of administrations. It is also used as an ingredient which promotes clinical efficacy of many drug formulations. It is *Vata kapha shamak* and described in various diseases such as *Shula, Gulma, Udar roga, Anaha, Kandu, Mukhroga, Svasa, Kasa, Kustha, Pandu, Kamala* etc. [2]

Gomutra haritaki is a classical herbal drug and it have been referred in various *Ayurvedic* texts such as *Charaka samhita, Sushruta samhita Ashtangahridayam,Vrihat nighantu ratnakar* etc. *Haritaki* and *Gomutra* is two active ingredient of this herbal preparation which is having a number of pharmacological properties. *Gomutra haritaki* may be defined as pattern of administration of *Haritaki* where *Haritaki* is combined with *Gomutra* by using various methods of preparation. It has very broad range of usefulness so it is used for treating the variety of diseases. In the classical text it is especially mentioned in *Pandu roga (*Anemia*) and Mukha roga (*Mouth diseases). *Gomutra* is the recommended *anupan* during its administration. It may be also used in various disorders with choice of different *Anupan.*

MATERIAL AND METHODS

Literature review

A comprehensive review has been made to compile the classical references on *Gomutra haritaki* to show complete knowledge of formulary including standard operative procedures for preparation and therapeutic indications. The data available has been presented in a systematic manner with reference to their ingredients, therapeutic uses, dose, dosage form and *Anupana*.

Procurement of ingredients

Cow urine was collected from nearby renowned cowshed and used in formulation after certification of purity. *Haritaki* fruits (with stone) were procured by N.I.A. pharmacy.

Preparation of *Gomutra haritaki*

Gomutra haritaki was prepared as per guidelines mentioned by *Vrihat nighantu ratnakar*.[3] Fresh and dried fruit rind of *Haritaki* were dipped in pure cow urine and this arrangement was kept in sunshine for 21 days. Everyday stale cow urine was replaced with fresh urine. On 21st day fruit rind was taken out and washed properly with fresh water and there after dried in shade cautiously. The well-dried *Haritaki* was powdered and stored in a pot.

Oraganoleptic and physicochemical study

The finished product was evaluated for organoleptic and various physicochemical characters. Organoleptic characters such as color, odor, taste, and texture were analyzed and recorded. Physicochemical characteristics such as moisture content, total ash, water soluble ash, acid-insoluble ash, alcohol-soluble extractive, and pH were analyzed by quantitative analysis as per the standard techniques.

RESULTS AND DISCUSSION

Literary review

As per available references found in *Ayurveda* text, *Gomutra* and *Haritaki* are two important ingredients used in its preparation. Some more ingredients are also mentioned in some references of *Gomutra haritaki. Gomutra* with *ushna* and *tikshna*[4] properties and *Haritaki* with *anulomaka*[5] properties cleanse the *Srotas*. It is indicated in *Arsha* (Haemorrhoids), *Pandu* (Anemia), *Shotha* (Swelling), *Mukhroga* (Stomatitis). It is also prevalently used in *Sthaulya* (Obesity).

Haritaki (*Terminalia chebula*) is one of the awesome medicinal plants and it is widely used in traditional systems of *Ayurveda*. It increases the digestive fire and helps in evacuation of bowel. When the powder of *Haritaki*, *Vibhitaki* and *Amalki* are combined, it produces '*Triphala',* a widely accepted herbal remedy for gastrointestinal disorders. Various biological activities of *Haritaki* such as anti-oxidant, hepato-protective, anti-bacterial, anti-viral, anti-dermatophytic, anti-mutagenic, hypoglycemic, hypo-lipidemic, anti-ulcer activities etc have been explored through different studies. [6]

The *Ayurveda* texts have described the therapeutic values not only of plants, but of animal products and minerals also. Milk, urine and honey etc are certain animal products which are described widely. Among the urine, Cow urine has global acceptance as the universal medicine for most of the diseases. In India it is believed to be a pious

thing and used in almost all rituals. Lots of the people use it daily as it boosts immunity. Several references are available in modern literature that recommend drinking urine for sleeplessness, heart stroke, diabetes mellitus, cancer and in bladder problem. Many topical ointments and creams have cow urine extract and it is used in infectious skin diseases due to its urea content. Various biological activities such as anti-oxidant activity, anti-diabetic activity, immuno-modulator effect, anti-bacterial activity, anti-fungal activity, anti-cancer activity, wound healing property, anti-clastogenic activity etc have been evaluated and established through different studies. [7]

As per references available in *Ayurveda* texts, *Gomutra haritaki* is prepared with *Gomutra* and *Haritaki,* by using different methods like trituration with *Gomutra* (*Bhavana)*, impregnation with *Gomutra* (*Klinna*) and boiling in *Gomutra* (*Kwatha/ Paka/Siddha*).

In *Sushurut samhita, Arshrogadhya*, *Gomutra siddha haritaki* has been mentioned for *Arsha* (Piles). Here *Haritaki* has been boiled in *Gomutra* for making decoction. [8]

In *Charaka samhita, Panduroga chikitsasthana,* there is a reference of *Gomutra Kilnna Haritaki* in *Kaphaja pandu roga*. In this reference wet *Haritaki* (*Klinna haritaki*) has been advised in the disease. The author has not described how long *Haritaki* should be soaked in cow urine. The edible form (wet or dry) of *Haritaki* is even not defined. [9] Dosage form is also not mentioned.

Commentator of *Charaka Samhita, Chakrapani* explained that *Haritaki* can be given either in the form of paste (*Kalka*) or powder. In his text he has recommended *Gomurtra* for making *Kalka*. Commentator mentioned that whenever the *Gomutra haritaki* is taken as powder it should be given with cow urine.

Acharya Vagbhatta recommends paste (*Kalka*) or decoction (*sidha*) of *Haritaki* to cure the *Pandu roga*. In *Sarvangasundera* commentary, *Arundutta* has advised to use *Gomutra* as liquid for making paste and decoction. [10]

The author of *Vrihat nighantu ratanakara* depicted that *Haritaki* fruit should be submerged in cow urine for 21 days. At last day it should be taken out and dried. He recommended that one *Haritaki* should be used daily. Author provides very short description on preparation of *Gomutra haritaki* and it is very elementary information.

By the name of *Gomutra haritaki* one more preparation is available in *Mukha roga adhikar* of *Ashtanga hridayam*. In this preparation, at first *Haritaki* is boiled in *Gomutra,* there after it is soaked in decoction of *Hvivera, Mishreya* and *Kustha* successively and dried under the sun.[11] It is officially described in Ayurvedic formulary of India. [12]

If we observe the process of formation of *Gomutra haritaki*, it can be concluded that by soaking *Haritaki* in the cow urine, *Haritaki* absorbs the cow urine and their dissolved content. Certainly some parts of *Haritaki* will also dissolve in the urine during the process. At the end of the process, *Haritaki* and some dissolved elements of cow urine are obtained in the form of wet *Haritaki*. This wet *Haritaki* should be used only after it is completely dried.

Preparation of *Gomutra haritaki*

The colour of mixers was yellowish brown and there was an intense smell of cow urine during the preparation of *Gomutra haritaki*. Table No. 5 shows the measurements during the preparation of *Gomutra Haritaki.*

Table 5.: Measurements during preparation of *Gomutra haritaki*

S. No.	Detail	Measurement	Remark
1.	Weight of *Haritak* (before preparation)	500 gm	
2.	Cow urine used	10500ml (total in 21days)	
3.	Weight of *Gomutra Haritaki* (after preparation)	625 gm	Process & handling loss is also included

Analytical, organoleptic and physiochemical characterization

Some preliminary and basic quality controlling parameters are important to assess the quality & genuineness of the formulation. General organoleptic character and other physicochemical parameters such as moisture content, ash value, water soluble ash, acid-insoluble ash, alcohol-soluble extractive, and pH of *Gomutra haritaki* were assessed. The finished product was yellowish brown in colour, of intense smell of cow urine with bitter taste and soft texture.

Physicochemical parameters such as moisture content, ash value, acid insoluble ash, water soluble ash, pH of the drug and alcohol soluble extract of *Gomutra haritaki* (quantitative analysis) were find out through validated methods and it is mentioned in Table No. 6.

Table 6: Organoleptic and Physico-chemical properties of prepared *Gomutra haritaki*

S. No.	Character	Finding
1.	Colour	Yellowish brown
2.	Odour	Urine smell
3.	Taste	Bitter (Kashaya)
4.	Texture	Soft
5.	Moisture Content	8.76% w/w
6.	Ash Value	6.705% w/w
7.	Acid Insoluble Ash	0.053% w/w
8.	Water Soluble Ash	6.108% w/w
9.	$_{P}$H Of 5.0% W/V Slurry	5.76
10.	Alcohol Soluble Extract	3.94% w/w

CONCLUSION

Gomutra haritaki may be used in most of the diseases if one would use a particular *Anupana* during drug administration because it has most therapeutically efficient ingredients as per *Ayurveda*. It may be validated through clinical studies. During preparation of *Gomutra haritaki* a homogenous mixture with intense urine smell has been attained. Qualitative and Quantitative characterization of the drug has been evaluated by using standard guidelines. In conclusion the results of this study may serve as a beneficial tool to maintain the quality aspects of *Gomutra haritaki*.

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